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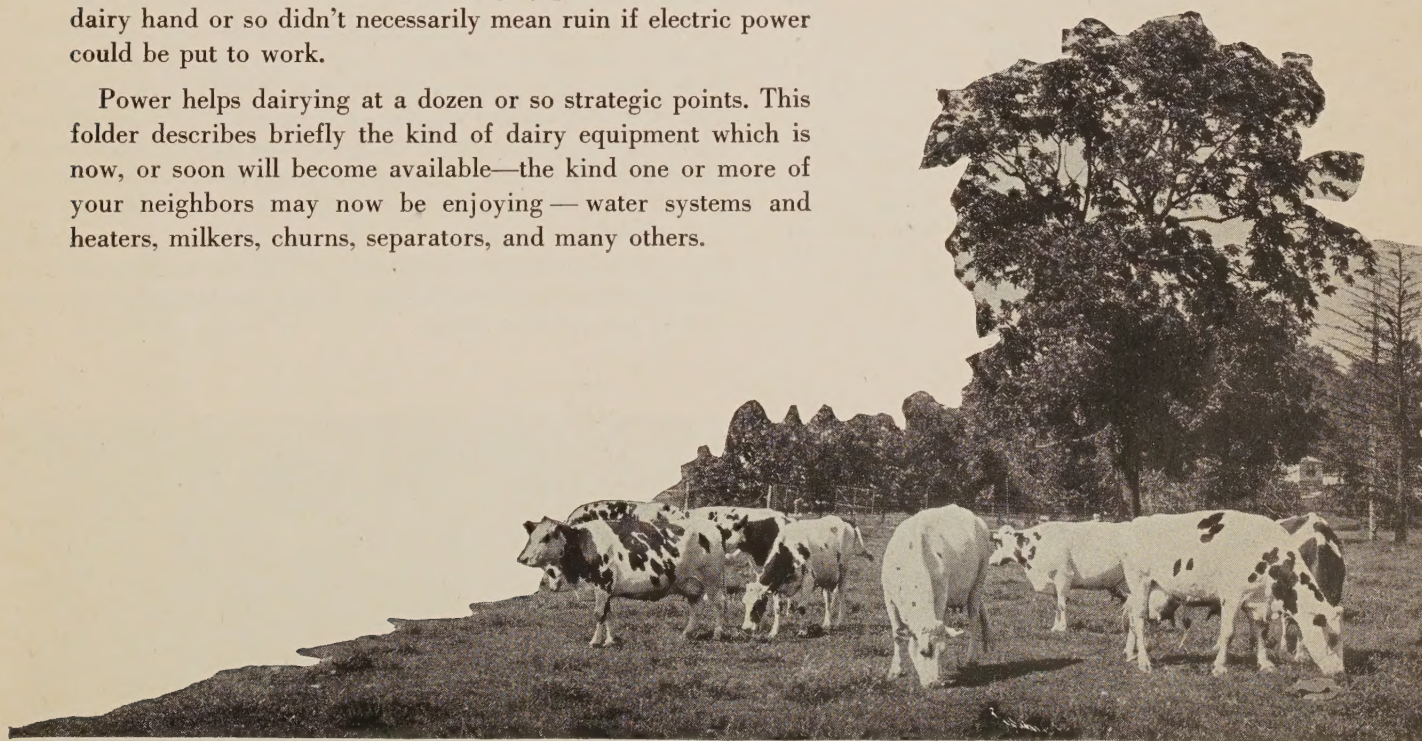


More POWER TO YOUR DAIRYING

LABOR shortages of World War II taught a lesson to dairymen—that electric power can't be topped as a dairy hand.

Farms with electric dairy equipment found that the extra hours of labor which that equipment saved, and the extra lift it gave to dairy production, was often the margin between a reduced or eliminated herd and a highly productive one. A lost dairy hand or so didn't necessarily mean ruin if electric power could be put to work.

Power helps dairying at a dozen or so strategic points. This folder describes briefly the kind of dairy equipment which is now, or soon will become available—the kind one or more of your neighbors may now be enjoying—water systems and heaters, milkers, churns, separators, and many others.



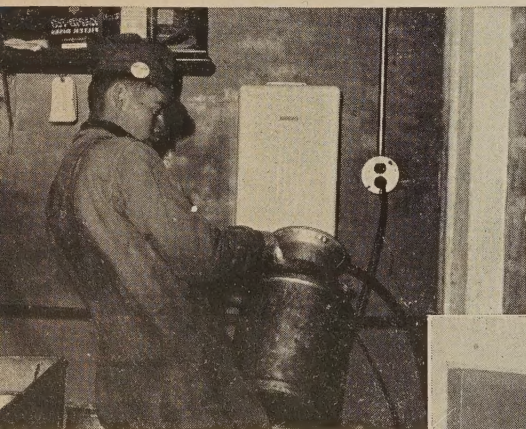
More Milk... Less



Water for hosing barns and milk houses can best be pumped electrically.



Plenty of hot water for washing utensils in sinks . . .



...from a water heater that's on the job when you want it.

Pressure Water System. Water in adequate quantities when you need it is a must for modern dairying. Here are the places where water pumped electrically under pressure can help in your dairy barn; and the electrical equipment you'll need to go with your pressure system.

Pure milk standards demand frequent hosing of your milk house and barn. Milk utensils and equipment should be rinsed quickly in cold water, then scrubbed thoroughly in scalding water at about 180 degrees, with washing powder. Handy hot water saves time. An electric water heater or sterilizer is the answer.

Dairy Water Heaters range in size from 5 to 15 gallons and larger. The smaller sizes will heat water to sterilize two double-unit milkers and other utensils. Well-insulated heaters are equipped with either immersion or external type heating elements. They consume from 25 to 50 kwh for each 100 gallons of hot water. They are operated either by hand or by thermostatic controls.

Electric Milk Can Sterilizers usually have capacity equal to four 10-gallon cans, although larger ones are available. It takes about half an hour to bring the temperature inside the box to 212 degrees, and the box then maintains a temperature above 170 degrees for about half an hour after heating has stopped. About 2¼ kwh is used per sterilization, although hot air sterilizers may use less.

Caution: Immersion heating elements of heater or sterilizer should be kept covered with water at all times to prevent burning out.

Drinking Cups. Reports show that cows supplied with individual automatic watering bowls produce more than 6% more milk, 12% more butterfat, and drink 18% more water than cows watered twice a day; and up to 11% more milk and other corresponding increases than cows watered once a day. (This difference may be greater during winter months.) Automatic watering requires a pressure system.

Bottle Washer. Electric brush-type washers are operated by a 1/6 to 1/4 horsepower motor. Bottle washers of large capacity operate automatically. Energy consumption is about ½ kwh per 1,000 bottles.



Power in your milk house provides water for sterilizing cabinets and handy bottle washers.



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Work

Milking Machine. Many dairy specialists advocate three or four minute milking employing two single-unit milking machines. Common types of machine are the portable and pipe-line. Proper installation, operation and cleaning methods are very important, and should be thoroughly understood before the machine is used. Average power consumption per 10 cows per month is about 30 kwh for pipe-line and 15 kwh for portable milking machines.

Cream Separator. Electric separating can be done while milking continues, thus making re-warming unnecessary. More cream is removed than when the job is done by hand. Average energy consumption is about $\frac{1}{2}$ kwh per 1,000 pounds of milk separated, or 2 to $2\frac{1}{2}$ kwh per 10 cows a month.

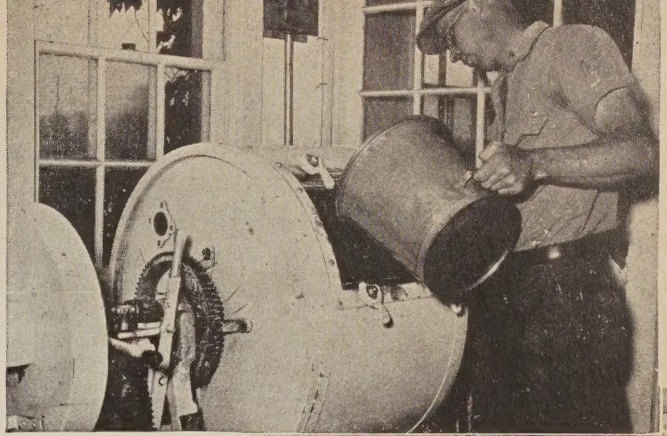
Milk Cooler. Rapid cooling of milk to 50 degrees or less, and its storage at that temperature, is necessary to guarantee highest returns; insure against spoilage and waste. Electric milk cooling is the most efficient method.

Mechanical milk coolers are of the "wet" and "dry" types. The former is an insulated tank which contains water cooled to a low temperature by refrigerated coils. The cans of milk are immersed in the water. The latter is usually a walk-in insulated box or cabinet, equipped with a refrigeration unit. Milk often is rapidly precooled over an aerator or surface cooler; then stored in the refrigerator.

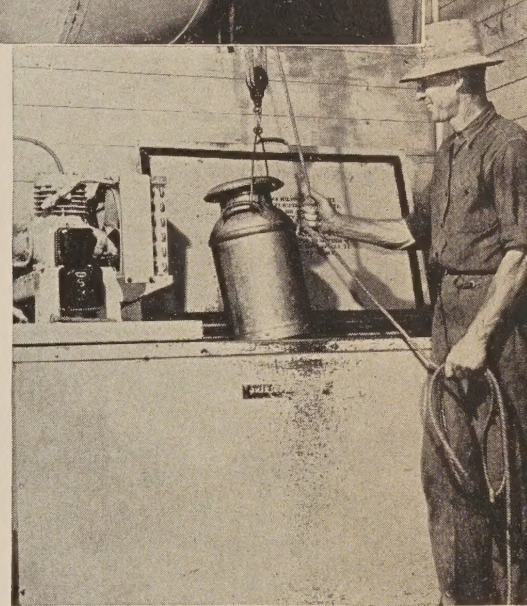
Dairymen selling bulk milk prefer the immersion type cooler. One or two-can size coolers are often adequate for the smaller dairy farms. An agitator to stir the water speeds cooling considerably.

The range of cooling temperature and season of the year are factors affecting operation of the cooler. Energy consumption for wet storage averages about 1 kwh for every 100 pounds of milk cooled throughout the year. For dry-box cooling and storage, energy consumption will be somewhat higher.

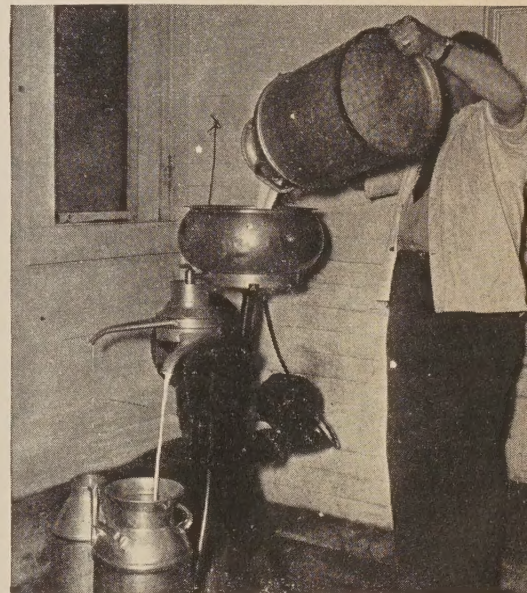
Both walk-in and lift-top storage facilities used for milk and cream may also be used for meat, fruits, vegetables and other perishable produce.



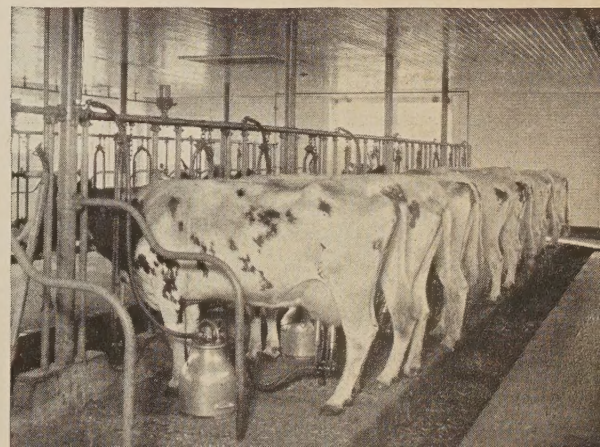
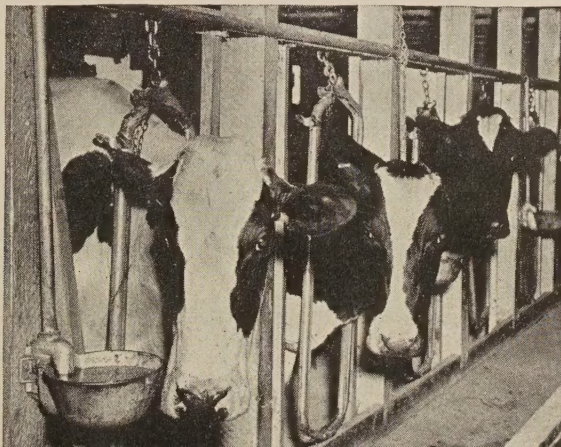
Churning by hand is inefficient; churning by power is quick and easy. Milk cooled electrically will not be spoiled milk.

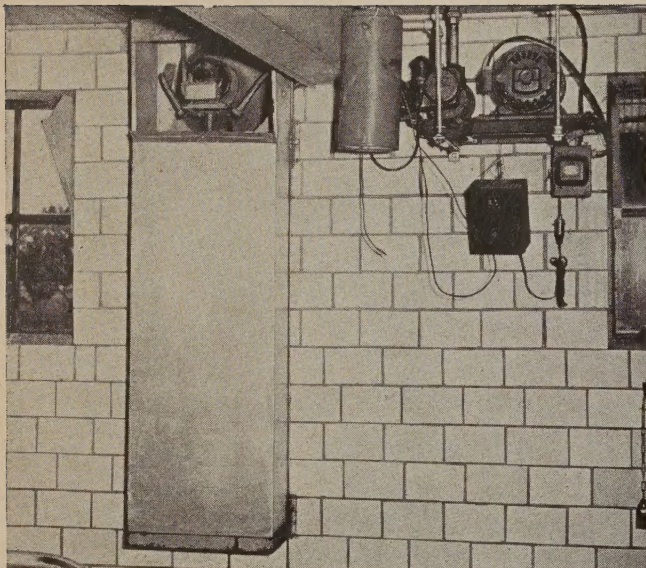


For higher cream yield and a shorter job in your milk house, separate electrically while the milking is going on.



Automatic drinking cups encourage cows to drink more and produce more. Electric milkers take the drudgery out of milking.





Cows need fresh air and they need moisture removed from the barn. A ventilation fan does both jobs cheaply.



Hosing or mechanical gutter cleaning is easy with electricity.

Clippers. Clipping is a sanitation measure of considerable importance to quality milk production. Electric-motor-driven clippers eliminate the work of a man to crank the machine; work much faster than the hand-operated variety. Current use is negligible.

Fly Screens and Traps. Electrically-operated fly screens and traps provide great sanitation aid for meeting health requirements. KWH cost is low, depending on length of time equipment is used.

Ventilation. Fresh air without drafts is important in the dairy barn. A healthy, producing cow requires about 4,000 cubic feet of fresh air per hour, and gives off large quantities of moisture that should be removed from the barn, not only for her own health but for the protection of the barn. Electric ventilation fans are easily installed; their small operating cost is more than made up in healthier cattle.

Gutter Cleaner. There are several types of gutter cleaners which work on the principle of removing manure directly from the barn to a manure spreader. Their chief advantages are that they save time and eliminate hard physical work. Comparatively few installations have been made. Although manufacturers contemplate eventual marketing of small-size gutter cleaners, the device is still in the experimental stage.

Churn. An electric churn, requiring almost no personal attention during the churning process, saves time and labor. Energy consumption is about 1 to 2 kwh per 100 pounds of butter churned, varying with size of churn, quantity and condition of the cream. Average churning time is 52.4 minutes. In converting a hand-operated churn to electrically powered, the original rate of churning should be maintained.

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